

ker100 Metadata

Field	Description
Title	High-resolution depth model of the Kerguelen Plateau – 100 m
Metadata Identifier	
Digital Object Identifier	
Topic Category	ELEVATION: height above or below sea level. GEOSCIENTIFIC INFORMATION: earth sciences. OCEANS: features and characteristics of salt water bodies excluding inland waters.
Keywords	bathymetry, soundings, echo sounders, multibeam sonar, Southern Ocean, Heard Island
Key Dates	CREATED: V1 - 02 November 2010 UPDATED: V2 - 28 March 2019 UPDATED: V3 - 06 November 2022
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Abstract	This dataset contains bathymetry (depth) products from the compilation of all available source bathymetry data within the Kerguelen Plateau into a 100 m-resolution Digital Elevation Model (DEM). Heard Island and McDonald Islands are situated on the Kerguelen Plateau within the south-west Indian Ocean and lie within Australia's marine jurisdiction. Heard Island and McDonald Islands (HIMI) are surrounded by an Exclusive Economic Zone extending 200 nautical miles from their coasts and much of the Kerguelen Plateau south of Heard

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	<p>Island has been recognised as Australian Extended Continental Shelf by the UN Commission for the Legal Continental Shelf. The area is currently targeted by fishers licensed under the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). The purpose of the bathymetry grid is to improve the geomorphic detail of seafloor features, including submarine volcanic hills on the top of the Kerguelen Plateau and a complex of submarine channels draining the southern flank of northern plateau. Australian Hydrographic Office-supplied single beam echo sounder bathymetry data were used to develop the general depth variation across the Kerguelen Plateau and adjacent Williams Ridge extending to the south-east of the central plateau. Deep-water multibeam bathymetry data reveal the complexity of the seafloor on Kerguelen Plateau and the surrounding abyssal plains and basins. These multibeam surveys were conducted both as systematic surveys by Research Vessel (RV) <i>Investigator</i> and <i>Sonne</i> over Williams Ridge. Other multibeam data were obtained from transit voyages that crossed through the Kerguelen Plateau and Williams Ridge area. SHOM-supplied combined multibeam and single beam data were collected around the French EEZ and approaches to Kerguelen Island, which is French territory. Austral Fisheries provided extensive crowdsourced bathymetry (CSB) data from their various blue-water fishing vessels using single beam echo sounders. These fishing vessels operate within the Kerguelen Plateau and Williams Ridge region under licence from the Australian Fisheries Management Authority. Austral Fisheries CSB data were provided to the Australian Antarctic Division (AAD) for restricted use in this project. All source multibeam and single beam bathymetry data were extensively edited as 3D point clouds to remove obvious anomalous noise, and given a consistent WGS84 horizontal datum, and where possible, an approximate MSL vertical datum prior to the grid interpolation process.</p>
<p>Purpose</p>	<p>This project aimed to develop a new high-resolution digital elevation model (DEM) for the Kerguelen Plateau region at a grid pixel resolution of 0.001-arc degree (about 100 m). The Heard and McDonald islands are situated on the Kerguelen Plateau and lie within Australia's marine jurisdiction. The seafloor area in the vicinity of the islands is currently targeted by fishers licenced under the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). Geoscience Australia (GA) and Australian Antarctic Division (AAD) scientists have a need to revise the Kerguelen Plateau DEM to better define the seabed</p>

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	<p>geomorphology and depth contours to assist marine environmental management of this sensitive area.</p>
<p>Data limitations* (optional)</p>	<p>AUSTRALIAN HYDROGRAPHIC OFFICE NOTICE: Not to be used for navigation. This kerg100 DEM product incorporates source bathymetry data reproduced under licence by permission of the Australian Hydrographic Office © Commonwealth of Australia 2021-2022.</p> <p>GEOSCIENCE AUSTRALIA NOTICE: This kerg100 DEM product incorporates data which are © Commonwealth of Australia (Geoscience Australia). The Commonwealth gives no warranty regarding the data's accuracy, completeness, currency or suitability for any particular purpose. This dataset has been compiled from a wide range of data sources of varying resolution and accuracy.</p> <p>SHOM NOTICE: No official hydrographic office has verified the information contained in this document and may not be held liable for the reliability of its reproduction or any subsequent amendment. The possession of this document does not constitute an exemption from the obligation to use the appropriate naval documents provided for by national and international regulations.</p> <p>SHOM STATEMENT OF INTELLECTUAL PROPERTY RIGHTS: © SHOM 2010 - Work carried out using data disclosed by the French Naval Hydrographic and Oceanographic Office (contract n° 168/2010) - www.shom.fr. This Office cannot be held liable for the results and the use that is made of them. All rights reserved except for teaching and research.</p> <p>ALFRED WEGENER INSTITUTE NOTICE: RV <i>Sonne</i> bathymetry data were provided courtesy of the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research.</p> <p>CSIRO MARINE NATIONAL FACILITY NOTICE: This kerg100 DEM product incorporates source bathymetry data provided by the CSIRO Marine National Facility and made available under a Creative Commons Attribution 4.0 International Licence. We acknowledge the use of the CSIRO Marine National Facility (https://ror.org/01mae9353) in undertaking this research.</p>

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	<p>This kerg100 DEM product has been compiled from a wide range of data sources of varying resolution and accuracy. Data are supplied 'as is' without any warranty or guarantee. The data may not be free of error, comprehensive, current or appropriate for your particular purpose. You accept all risk and responsibility for its use.</p>
Preview Image (optional)	
Data lineage (optional)	
Data file description* (optional)	<p>FILE: kerg100_06nov PROJECTION: Geographic Latitude/Longitude DATUM: WGS84 SCALE: 0.001*0.001 arc-degree (about 100 m) grid cells STORED DATA FORMAT: ESRI raster grid AVAILABLE DATA FORMATS: GMT/netCDF (CF-1.0) grid file, Fledermaus (V7.7.7) SD file</p>
Spatial Extent	<p>NORTH LATITUDE: -48.0 SOUTH LATITUDE: -56.0 WEST LONGITUDE: 68.0 EAST LONGITUDE: 80.0 HORIZONTAL DATUM: WGS84</p> <p>^aESRI raster Top -48.0005 ESRI raster Left 67.9995 ESRI raster Right 79.9995 ESRI raster Bottom -56.0005 ESRI raster Columns 12,000 ESRI raster Rows 8000 ESRI raster Cell Size X, Y 0.001, 0.001</p> <p>^aCell-registered, showing coordinates for edge of cells</p>
Temporal Extent	
Vertical extent (optional)	<p>MINIMUM HEIGHT: -4524 m MAXIMUM HEIGHT: 2679 m VERTICAL DATUM: approximates mean sea level (MSL)</p>
Maintenance and Update Frequency (optional)	<p>STATUS: Ongoing FREQUENCY: As required</p>
Resource Constraints and licensing	<p>COPYRIGHT: The content on this website is released under the Creative Commons Attribution 4.0 International Licence: https://creativecommons.org/licenses/by/4.0/ ATTRIBUTION: "Australian Hydrographic Office, Geoscience Australia,</p>

Field	Description
	James Cook University"
Processing*	See accompanying publication at: https://www.deeppreef.org/2011/07/29/kerghem/
References	
Credits and funding*	<p>CREDITS:</p> <p>Anne Worden (Australian Hydrographic Office) Michael Andrew (Australian Hydrographic Service) Mark Alcock (Geoscience Australia) Mike Sexton (Geoscience Australia) Phil O'Brien (Geoscience Australia) Michele Spinoccia (Geoscience Australia) Robert Parums (Geoscience Australia) Kim Picard (Geoscience Australia) Cisco Navidad (CSIRO) Stewart Edwards (CSIRO) Nelson Kuna (CSIRO) Gabriele Uenzelmann-Neben (Alfred Wegener Institute) Simon Dreutter (Alfred Wegener Institute) Mike Coffin (IMAS, University of Tasmania) Austral Fisheries Henk Brolsma (Australian Antarctic Division) Christelle Maillot-Dupas (SHOM)</p> <p>FUNDING: Geoscience Australia</p>
Supplemental information	
Online resources	